

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for applying adhesive for securing a printed circuit board to a substrate, the method comprising steps of:

providing a first printing tool with a first plurality of apertures defined therethrough, wherein a top of at least one aperture has a larger area than a bottom of the at least one aperture;

placing the first printing tool upon a surface of at least one of the printed circuit board and the substrate;

printing a first liquid adhesive onto the surface through the first printing tool, the first liquid adhesive forming islands of adhesive within each aperture;

removing the first printing tool perpendicularly from the surface such that the first printing tool deforms edges of the islands of the first adhesive to form a raised edge above an exposed major face of the adhesive at a periphery of an island such that the smaller area of the bottom of the aperture assists in pulling adhesive material upwardly to form the raised edge around only a portion of a periphery of each island; and

curing the first liquid adhesive;

placing a liner on top of the first adhesive, such that the liner contacts the raised edge of a plurality of islands; and

removing the liner which includes residual adhesive, whereby the integrity of most of a major surface of the adhesive island is preserved before laminating the printed circuit board to the substrate.

2. (original) The method of claim 1, wherein the first liquid adhesive is a silicone-based adhesive.

3. (original) The method of claim 1, wherein the step of curing the first liquid adhesive produces a tacky adhesive that slumps a negligible amount such that the raised edge is maintained above the exposed major face of the adhesive islands.

4. (cancelled)

5. (cancelled)

6. (original) The method of claim 1, wherein the providing step includes providing the first printing tool with connecting portions around the apertures such that the islands formed in the removing step have connecting open pathways defined therebetween to allow outgassing to an outside environment from between a laminated assembly of the printed circuit board and the substrate.

7. (original) The method of claim 1, wherein the providing step includes providing the first printing tool with straight connecting portions surrounding rectangular apertures such that the islands formed in the removing step are aligned in a regular array having straight connecting pathways defined therebetween.

8. (original) The method of claim 1, further comprising the steps of:
providing a second printing tool with a second plurality of apertures defined therethrough;
placing the second printing tool upon the surface;
printing a second thermally conductive liquid adhesive onto the surface through the second printing tool, the second liquid adhesive forming second islands of thermally conductive liquid adhesive within each aperture;
removing the second printing tool from the surface; and
partially curing the second liquid adhesive.

9. (original) The method of claim 1, further comprising the step of laminating the printed circuit board to the substrate with the cured adhesive therebetween to deform any raised edges on the islands to be coplanar with the major face of the adhesive islands.

10. (currently amended) A method for applying adhesive for securing a printed circuit board to a substrate, the method comprising steps of:

providing a first printing tool with a first plurality of apertures defined therethrough, wherein a top of at least one apertures has a larger area than a bottom of the at least one apertures; placing the first printing tool upon a surface of at least one of the printed circuit board and the substrate;

printing a first liquid adhesive onto the surface through the first printing tool, the first liquid adhesive forming islands of adhesive within each aperture;

removing the first printing tool perpendicularly from the surface such that the smaller area of the bottom of the at least one aperture pulls adhesive material upwardly to form a raised edge above an exposed major face of the adhesive around only a portion of a periphery of an island such that the smaller area of the bottom of the aperture assists in pulling adhesive material upwardly to form the raised edge around only a portion of a periphery of each island;

curing the first liquid adhesive to produce a tacky adhesive that slumps a negligible amount such that the raised edge is maintained above the exposed major face of the adhesive islands;

placing a liner on top of the first adhesive, such that the liner contacts the raised edge of a plurality of islands;

removing the liner which includes residual adhesive, whereby the integrity of most of a major surface of the adhesive island is preserved; and

laminating the printed circuit board to the substrate with the cured adhesive therebetween to deform any raised edges on the islands to be coplanar with the major face of the adhesive islands.

11. (original) The method of claim 10, wherein the first liquid adhesive is a silicone-based adhesive.

12. (original) The method of claim 10, further comprising the steps of:
placing a liner on top of the first adhesive, such that the liner contacts the raised edge of a plurality of islands; and
removing the liner before laminating the printed circuit board to the substrate.

13. (original) The method of claim 10, wherein the providing step includes providing the first printing tool with connecting portions around the apertures such that the islands formed in the removing step have connecting open pathways defined therebetween to allow outgassing to an outside environment from between a laminated assembly of the printed circuit board and the substrate.

14. (original) The method of claim 10, further comprising the steps of:
providing a second printing tool with a second plurality of apertures defined therethrough;
placing the second printing tool upon the surface;
printing a second thermally conductive liquid adhesive onto the surface through the second printing tool, the second liquid adhesive forming second islands of thermally conductive liquid adhesive within each aperture;
removing the second printing tool from the surface; and
partially curing the second liquid adhesive.

15. (withdrawn) An adhesive assembly comprising:
a substrate;
a printed circuit board; and
a cured first adhesive disposed in isolated islands between the printed circuit board and the substrate, the first adhesive formed with a raised edge at a periphery of each island;
wherein
the assembly of the printed circuit board and substrate deforms the raised edges on all the islands to be coplanar with an associated major face of each island of the first adhesive.

16. (withdrawn) The assembly of claim 15, wherein the adhesive is a silicone-based adhesive.

17. (withdrawn) The assembly of claim 15, further comprising a liner that is placed on top of the first adhesive before assembly of the printed circuit board with the substrate, such that the liner contacts substantially the raised edge of each island; and wherein the liner is removed before assembly of the printed circuit board with the substrate.

18. (withdrawn) The assembly of claim 15, further comprising a printing tool for printing the adhesive into the defined islands, the printing tool has a plurality of apertures wherein the top of the apertures has a larger area than a bottom of the apertures that serves to form the raised edges of the islands when the printing tool is removed.

19. (withdrawn) The assembly of claim 15, wherein the islands of the first adhesive are formed with connecting pathways therebetween open to an outside environment from between the printed circuit board and the substrate.

20. (withdrawn) The assembly of claim 15, further comprising a second thermally conductive adhesive disposed between the printed circuit board and the substrate, the second adhesive forming second islands of thermally conductive adhesive between the islands of the first adhesive such that the second islands have major faces substantially coplanar with the major faces of the first islands.